UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

Site: Mid-America Refining
ID: KSD084091545
2-6
6-29-92

**MEMORANDUM**

SUBJECT: Request for a Removal Action at the Mid-America Refining Co. (MARCO) Site, Chanute, Kansas

FROM: Janice J. Kroone, On-Scene Coordinator
ER&R/SUPR

THRU: Robert W. Jackson, Chief
ER&R/SUPR

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SUPR

117944

TO: Dennis Grams, P.E.
Regional Administrator

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SUPERFUND RECORDS

CERCLIS ID#: KSD084091545
Site ID#: KN
Category of Removal: Time Critical
Nationally Significant/Precedent Setting: No

## I. PURPOSE

The purpose of this action memorandum is to request and document approval of the proposed actions and funding for a time-critical removal at the Mid-America Refining Company (MARCO) site, Neosho County, Chanute, Kansas. The owner/operator of the property is the Robert Cooley Trust, Amarillo, Texas. This is not a National Priorities List (NPL) site. The removal action is not nationally significant because the asbestos-containing material (ACM) and lead based paint are in exterior locations and in actual contact with the environment.

## II. SITE CONDITIONS AND BACKGROUND

### A. Site Description

#### 1. Removal Site Evaluation

The Mid-America Refinery Company (MARCO) site is located in Neosho County, Kansas, north of the city limits of Chanute. This site is a 25-acre abandoned oil refinery

that operated as a crude oil processor from 1934 until it was shut down in February 1981. Suspected asbestos containing material (ACM) was discovered on-site during the course of an Oil Pollution Act (OPA) removal which began in February 1998. Salvagers had damaged the old boiler on-site and had partially dismantled it. Salvaging activities resulted in damage to the integrity of the skin of the boiler thus exposing the insulation material inside. Analytical sample analysis confirmed the insulation in the boilers was asbestos. Two burners on-site were found to contain asbestos in several gaskets and in insulation located between bricks. An asbestos dump area was also found on-site. This material is in poor condition, friable and is open to the environment and therefore can cause a release of asbestos fibers.

Petroleum contaminated soils extend under the buildings on-site. These buildings are not structurally sound and are in disrepair. The state of Kansas has given approval to bury brick and concrete on-site. Because the groundwater is shallow in numerous areas throughout the site, sampling was done on the painted surfaces of the buildings to ensure the paint on the bricks did not pose a leaching problem. Several of the buildings have peeling paint and laboratory analysis found the paint failed the Toxicity Characteristic Leaching Procedure ("TCLP") analysis for lead. TCLP lead was found on corrugated tin on the outside of one building. This paint is chipping off. The tin cannot be buried on-site and must be shipped to a construction and demolition landfill for disposal.

Numerous site investigations have been conducted on this property. They are as follows:

The Kansas Department of Health and Environment (KDHE) conducted a preliminary assessment/site investigation (PA/SI) of the site in 1986. Field work associated with the PA, conducted on February 2, 1986, visually identified several areas of possibly contaminated soil near the oil/water separator unit and pools of hydrocarbons, apparently from leaky valves and/or pipes, scattered throughout the site.

Field work associated with the SI, conducted in September 1986, included ambient air monitoring for organic vapors and explosive atmospheres; installation of four on-site monitoring wells; ground water well sampling; limited sampling of on-site soil, sediment and sludge; and surface water sampling. The SI did not include an assessment of the buildings or their contents. The SI indicated that ground water contamination, composed of refined petroleum products, was migrating in a southeastwardly direction, following the ground water flow beneath the site. On-site surface water runoff flowed easterly, toward Highway 169, and accumulated along the eastern edge of the property. Surface water samples indicated the presence of hydrocarbons. Surface soil contamination was visible throughout the site; analysis indicated soils in stained areas to be heavily saturated with hydrocarbons.

In conjunction with the SI, a tank evaluation survey was conducted by KDHE. The survey indicated that approximately 40 percent of the tanks had inadequate secondary containment.

On October 9, 1992, KDHE visited the site and conducted a limited inventory of potentially hazardous substances remaining in the on-site buildings. Results indicated that numerous marked and unmarked containers holding various substances were located throughout the buildings. Many hazardous substances, including corrosives, flammables and poisons were found. Buildings were in a dangerous state of decay and fully accessible to the public. Fencing at the site was inadequate and in some areas in a state of disrepair.

On November 16-18, 1992, the Environmental Protection Agency (EPA) conducted a site assessment. The assessment included documentation of site conditions; an inventory of all containers inside buildings; collection of ground water samples from on-site monitoring wells; surface water samples from an off-site drainage ditch and from the oil/water separator system; and soil, debris, sediment and sludge samples from the site. Field screening found asbestos materials in pipe wrap and tank insulation. The assessment found that excessive runoff and pools of oily water were observed throughout the site during heavy precipitation. Floor sweepings composited from floors of the on-site laboratories found extensive mercury contamination. Most of the abandoned drums found on-site were rusted and leaking. Materials in the drums were found to be RCRA hazardous waste. No PCBs were detected in samples collected on-site. Volatile organic compounds (VOCs) associated with petroleum products were detected in the ground water sample, with benzene showing the highest concentration at 972 ug/l. On-site soil and sludge samples collected from the holding pond indicated total petroleum hydrocarbons (TPH) with the highest concentration of 165,400 milligrams per kilogram (mg/kg).

In May 1997, EPA surveyed the property and produced a site map to determine the number and condition of tanks remaining on-site.

A Phase I and II Comprehensive Investigation (CI) was performed by Golder Associates Inc. (Golder) on behalf of the Kansas Department of Health (KDHE) under the State Water Plan. Phase I was conducted the week of December 8, 1997, and Phase II from March 30-April 10, 1998. The phase I CI found total petroleum hydrocarbons(TPH); Benzene, Toluene, Ethylbenzene and Xylene (BETX) compounds; and naphthalene in soil and in the groundwater attributable to MARCO to have migrated approximately 500 feet down gradient of the site. These contaminants were found to a depth of 13 feet. Phase II information has not been received to date.

2. Physical Location

The MARCO site is located just outside the city limits on the north edge of Chanute, Kansas, northwest of the intersection of West Hickory Street and Santa Fe. The site is within the NE 1/4 of the SE 1/4 of Section 17, Township 27, Range 18E. The site comprises approximately 25 acres of land, with dimensions of 993 feet north to south, by 1,320 feet east to west.

3. Site Characteristics

The site is an abandoned oil refinery on the northern edge of Chanute, Kansas, a city of approximately 10,000 people. During full production, MARCO processed approximately 2,800 barrels per day of crude oil stock. This stock was refined into diesel fuel, jet fuels, gasoline, oil and kerosene. The remaining crude bottom products were used to make asphalt.

Residential property lies immediately to the south and west of the facility and commercial properties border the east and north boundaries. Approximately ten residences and seven businesses are located across the street within 200 feet of the refinery. The refinery is located on the side of a hill and surface runoff is directed to the east of the site. This runoff flows into an ephemeral tributary, which empties into the east-west trending Village Creek, which is part of the Neosho River Basin. The Neosho River is the primary source of drinking water for the City of Chanute.

Portions of this site are located in a flood plain. Over the history of this site, flood waters have covered a portion of the property on at least four occasions. Most recently in the spring of 1994.

4. Release or Threatened Release of a Hazardous Substance, or Pollutant, or Contaminant

EPA's investigation of the suspected Asbestos Containing Material (ACM) determined this material to be asbestos. Some of this material had been enclosed inside a boiler, but metal salvaging operations conducted at the site under the direction of the trustee of the Robert Cooley Trust, has caused a release of asbestos into the environment. As long as the boiler structure remains damaged and in place at the site, there will be a continued release of this material into the environment. ACM was also found in gaskets and insulation in two burners on-site and in a dump area. The dump area is located in an area where runoff could take ACM into a waterway. Windy conditions could cause the ACM at this site to become airborne.

Clinical evidence of the adverse effects associated with exposure to asbestos is present in the form of several well-conducted epidemiological studies of occupationally exposed workers, family contacts of workers, and persons living near asbestos mines. These studies have shown a definite association between exposure to asbestos and an increased incidence of lung cancer, pleural and peritoneal mesothelioma, gastrointestinal cancer, and asbestosis. The latter is a disabling fibrotic lung disease that is caused only by exposure to asbestos. Asbestosis is pulmonary fibrosis caused by the accumulation of asbestos fibers in the lungs. Symptoms include shortness of breath, coughing, fatigue, and vague feelings of sickness. When the fibrosis worsens, shortness of breath occurs even at rest. Exposure to asbestos has also been associated with an increased incidence of esophageal, kidney, laryngeal, pharyngeal, and buccal cavity cancers.

Several buildings on-site contain lead based paint which was found to contain levels of 31.5 mg/l (milligrams per liter) and 6.55 mg/l of lead. This paint was tested using the Toxicity Characteristic Leaching Procedure ("TCLP") and exceeded the limit of 5 mg/l as set forth in 40 CFR 261.24, Table 1. This paint is in poor condition and is flaking off. The brick this material is on will be buried on-site, the groundwater on-site is very shallow and, over time, the lead may leach into the groundwater, therefore the paint needs to be removed before the building is demolished and the brick is buried on-site. There is also some tin that is painted with flaking lead based paint that fails TCLP for lead. This tin will be sent to a construction and demolition (C&D) landfill. The paint will be removed from the tin prior to sending the tin to a C&D landfill.

Lead is toxic to humans and animals via exposure through inhalation, ingestion, and direct contact. Lead is persistent in the environment and it bioaccumulates. Therefore, long-term exposure to lower levels can result in a build up of lead in the body and more severe symptoms. Chronic exposure to low levels of lead has been linked to the existence of developmental disabilities in children. The symptoms of mild lead poisoning are decreased physical fitness, fatigue, sleep disorders, headache, aching bones and muscles, digestive symptoms, abdominal pain, and decreased appetite. Young children are the most sensitive to lead toxicity effects. More severe symptoms may include anemia, pale skin, a blue line at the gum margin, decreased hand grip strength, abdominal pain, severe constipation, nausea, vomiting, and paralysis of the wrist joint. Prolonged exposure may also result in kidney damage. Lead is a probable human carcinogen and exposure may also have adverse effects on the immune system.

Lead is toxic to birds (especially water fowl), mammals, and fish, and can reduce or eliminate various bacteria and fungi which assist in decomposing organic matter. Lead in contaminated soil can be taken up by roots of plant life, increasing the residents' risk of exposure.

5. National Priority List Status

This site is not on the National Priorities List (NPL).

B. Other Actions to Date

1. Previous Actions

On July 9, 1994, an action memorandum was signed by EPA under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). EPA began the clean-up in August 1994 and the action was completed in March 1995. This removal cost approximately $1,192,731. The CERCLA removal included the following actions:

Vandals had broken mercury thermometers and gauges in several laboratory buildings on-site creating extensive mercury contamination in these buildings. Mercury

contaminated waste was removed from these buildings and air monitoring was accomplished. Air monitoring results indicated that established clean-up levels were achieved. Two hundred and twenty six gallons of D009 waste was transported from the site and disposed.

The oil/water separator was excavated and the sludge was mixed with fly ash and shipped off-site to an approved disposal facility. A total of 476 tons of F037 waste was removed from the site. The oil/water separator was backfilled with clean fill dirt.

All laboratory chemicals and drums of hazardous waste, found abandoned throughout the site, were sampled appropriately, containerized for shipping, profiled and disposed at an approved disposal facility. This includes the following wastes and quantities: D001(ignitable) - 2,055 gallons; D002 (corrosive) - 440 gallons; D008(lead) - 5 gallons; D007(chromium) - 5 gallons; D015(Toxaphene) - 5 gallons; and D023(o-cresol) - 10 gallons.

Asbestos containing materials (ACM) were abated from tanks, cracking towers, piping and boilers by a state of Kansas certified company. A total of 1,320 cubic-yards of asbestos was removed from the site and transported to an approved landfill.

The contents of all tanks were sampled and it was determined one tank contained approximately 300 gallons of ignitible hazardous waste (D001). This material was pumped into 55-gallon drums and transported to an approved disposal facility.

The remaining tanks contained petroleum materials which could not be included in the CERCLA removal action due to the CERCLA petroleum exclusion provision. EPA left 138 tanks on-site, fifty-nine of which contained petroleum related materials.

After the CERCLA clean-up was completed, Robert Moore, the trustee of the Robert Cooley Trust fund which owns the property, obtained the services of numerous scrap metal salvagers. These individuals scrapped 110 tanks and associated piping and discharged much of the contents onto the ground. Due to their scrapping efforts, tops and sides of tanks were cut off which has allowed rainwater to collect in the tanks and the petroleum materials to directly discharge onto the ground. Because the site sits on a steep hill, run-off from rain events allow these petroleum materials to discharge indirectly into the Neosho River.

Also during scrapping activities, the use of cutting torches to salvage steel from tanks and piping repeatedly started fires igniting petroleum products remaining in the tanks and piping. Sometimes fires were intentionally set in the tanks to burn out the tank contents so the tanks could be more easily salvaged. The Chanute Fire Department responded to approximately nine fires at the site during the period from August 1995 to October 1996. During one fire, on October 15, 1996, 50 gallons of oil had drained across the road and caught on fire which in turn caught a tank on fire. This fire burned out vegetation from a wetlands areas. Residents three miles north of the site were concerned about smoke from the fire.

In November 1997, KDHE fenced the west side of the site to restrict access to the property.

2. Current Actions

On February 17, 1998, EPA mobilized to the MARCO site to begin a removal action authorized under Section 311(c) of the Federal Water Pollution Control Act ("Clean Water Act") as amended by the Oil Pollution Act of 1990 (OPA) which allows for the removal of oil-contaminated materials and debris to mitigate or prevent a substantial threat of a discharge of oil.

To date the following actions have been accomplished on site:

Sludge (55,306 gallons) was removed from the 30 remaining tanks on-site. This material was either heated and loaded into tank trucks and sent to various cement kilns to use for fuel blending or, the material (255.12 tons) that could not be heated was solidified with fly ash and sent to a Subtitle D landfill.

Heavily petroleum-contaminated water (60,525 gallons) from the tanks was sent to a local wastewater treatment facility.

Contaminated runoff from the site is being captured and treated through EPA's Emergency Response Water Treatment unit, the Springfield Belle. To date 1,938,250 gallons of water has been treated.

Metal from the tanks and piping is being sent to a scrap metal facility. To date 1,047.48 tons has been shipped.

C. State and Local Authorities' Role

KDHE performed numerous site investigations between 1940 and 1992, some of which are described herein.

## III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The site conditions pose a significant threat to public health or welfare which meet the criteria for response actions under 40 CFR Part 300.415(b)(2) of the National Contingency Plan (NCP) as follows:

40 CFR 300.415(b)(2)(i) - - Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.

40 CFR 300.415(b)(2)(v) - - Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

40 CFR 300.415(b)(vii) - - The availability of other appropriate federal or state response mechanisms to respond to the release.

Due to the close proximity of residences and businesses, the deteriorated condition of the existing asbestos, weather conditions, especially winds, can cause the asbestos fibers to become airborne and pose a health threat to the public and to the workers on the OPA removal. At this time there are no other federal or state response mechanisms which can respond and mitigate this situation.

In order to dispose of brick on-site and prevent the lead from leaching into the groundwater, the pealing lead-based paint must be removed from the building brick. Also, to dispose of the tin at a Title C or D landfill, the lead based paint must be removed from the tin.

## IV. PROPOSED ACTIONS AND ESTIMATED COSTS

### A. Proposed Actions

#### 1. Proposed Action Description

Removal of the asbestos containing material by a state of Kansas asbestos certified company will mitigate this situation. Dismantling of the boiler and burner structures is required to remove the asbestos. The asbestos material will be sent to a landfill appropriate for this material. All state of Kansas and federal regulations on asbestos removal will be followed. This will include the building of enclosures around the work area as appropriate, wet removal methods, air monitoring, personal protective equipment to include appropriate respirators, etc. All structures, such as the boiler, burners, etc., that contain asbestos will have the material removed, cleaned and scraped per Kansas regulations. The lead based paint will be scraped from the tin, containerized and solidified.

#### 2. Contribution to Remedial Performance

This is a non-NPL site. The proposed actions will mitigate the immediate threats posed by the conditions at this site. The removal proposed in this action memorandum will, to the extent practicable, contribute to the efficient performance of any long-term remedial action with respect to the release or threatened release concerned.

#### 3. Description of Alternative Technologies

There are no other alternative technologies available to address this issue.

#### 4. EE/CA

Not applicable.

5. Applicable or Relevant and Appropriate Requirements (ARARs)

The NCP, 40 CFR 300.415(i), provides that fund-financed removal actions under Section 104 of CERCLA shall, to the extent practical, consider the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental, state environmental, or facility-citing laws. A letter sent to Kansas requested ARARs for this site.

6. Project Schedule

It is anticipated the asbestos removal will begin on July 7, 1998, and will last for approximately 4 weeks.

7. Action Level

All asbestos will be removed. All piping and metal will be painted after asbestos removal to further encapsulate any fibers per State of Kansas regulations.

Lead based paint will be scraped from the brick and tin.

B. Estimated Costs

Extramural Costs

| | |
|---|---|
| Regional Removal Allowance Costs | $60,000 |
| START Costs | 10,000 |
| Contingency | 14,000 |
| Subtotal, Extramural Costs | 84,000 |
| Intramural Costs | |
| Intramural Direct Costs | 5,000 |
| Intramural Indirect Costs | 10,000 |
| Subtotal, Intramural Costs | 15,000 |
| **TOTAL, REMOVAL PROJECT CEILING** | $99,000 |

V. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks to the hazardous constituents.

VI. OUTSTANDING POLICY ISSUES

None.

VII. ENFORCEMENT

EPA attempted to negotiate with the trustees of the Robert Cooley Trust for a Consent Order in which they would undertake all time-critical removal actions necessary at the site. These negotiations were unsuccessful resulting in EPA performing a Fund-financed cleanup at the site in 1994-1995.

On October 28, 1996, EPA issued a Unilateral Order (UAO), pursuant to Section 7003 of the Resource Conservation and Recovery Act, (RCRA), 42 U.S.C. 6973, to Mr. Robert Moore, as trustee of the Robert Cooley Trust, to cease dismantling activities on-site and develop a plan to address the concerns at the site. This measure was taken after determining there was imminent and substantial endangerment to human health and the environment because of the release and discharges, or threatened release and discharge, of oil and hazardous and/or solid waste from the site. In January 1997, this case was turned over to the Department of Justice for action. The dismantling activities at the site subsequently ceased but the Robert Cooley Trust did not agree to perform any response actions, and have been non-responsive.

VIII. RECOMMENDATION

This decision document represents the recommended removal action for the MARCO site located in Neosho County, Kansas, developed in accordance with CERCLA, as amended, and not inconsistent with the NCP. Conditions at this site meet the NCP Section 300.415(b)(2) criteria for a removal. The total project ceiling is $99,000. Of this, an estimated $60,000 comes from the Regional removal allowance.

Approved:

Dennis Grams 6-29-98

Dennis Grams, P.E. Date
Regional Administrator